

Work Order ID 65271

January 10, 2011 12:54:25 PM



Page 1

Item ID: D412-664-209TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Turning Detail

Stop



Start Date: 1/10/11 Start Qty: 1.00



Cust Item ID:

Required Date: 1/21/11 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

CL

Date: 11/01/10

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D412-664-249

Rev B

100

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA708
2-Turn first side as per Folio FA708
3- File transition lines smooth.

110

0.00



QC

QC1- Inspect dimensions to dimension sheet

Memo

0.00

Quality Control

11.1.18

11.1.18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 Mori Seiki Mori Seiki CNC Lathe Large	MORI SEIKI CNC LATHE LARGE Memo 1-Turn second side as per Folio FA708 2- File transition lines smooth. 3- Remove sand and plugs 4-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-249 Inside of Cuff(Donot engrave on outside of tube)	0.00 0.00				1	8		
130 QC Quality Control	QC1- Inspect dimensions to dimension sheet Memo	0.00 0.00				1	8		
140 QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				1	8		

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 HandFXtube	Crosstubes Chemical Conversion	0.00							
	Memo	0.00							
	Hand Finishing Crosstubes								
160 QC	QC3- Inspect Part Finish	0.00							
	Memo	0.00							
	Quality Control								
170 Packaging	Packaging	0.00							
	Memo	0.00							
	Packaging								
	Identify and stock in kanban rack								
	Location: 4/6								

1 BB #1/01/25

DP 11-1-26

DP 11-1-26

W/O:		WORK ORDER CHANGES					
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Page 4

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Cust Item ID:

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

12/10/26
CL11101126

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Picklist Print

January 10, 2011 12:54:25 PM

Page 1

Work Order ID: 65271



Parent Item: D412-664-209TRN



Parent Item Name: Crosstube Turning Detail

Start Date: 1/10/11

Required Date: 1/21/11

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec
IPP Rev B 08.04.02 Removed polish EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6009-129		Manufactured	No			110	Each	12.0000	1	1			
Crosstube Material													

Location

Loc Qty

Loc Code

LG

12

38342

2

53594

10

ml 11.1.18

10

W/O:		WORK ORDER CHANGES					
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DART AEROSPACE LTD	Work Order: 65271
Description: Crosstube Assembly (412 Low Aft)	Part Number: D412-664-249
Inspection Dwg: D412-664-249 Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.625	+/-0.010	.619	✓	Vern	ML-7
	2.680	+0.005/-0.000	2.684	✓	Micr	ML-03
	2.680	+0.005/-0.000	2.684	✓	"	"
	2.687	+0.005/-0.000	2.691	✓	"	"
	2.793	+0.005/-0.000	2.798	✓	"	"
	2.930	+0.005/-0.000	2.935	✓	"	"
	3.067	+0.005/-0.000	3.070	✓	"	ML-05
	3.205	+0.005/-0.000	3.205	✓	"	"
	3.358	+0.005/-0.000	3.362	✓	"	"
	3.378	+0.005/-0.000	3.381	✓	"	"
	3.500	+0.005/-0.000	3.504	✓	"	"
SIDE B	0.625	+/-0.010	.619	✓	Vern	ML-7
	2.680	+0.005/-0.000	2.684	✓	Micr	ML-03
	2.680	+0.005/-0.000	2.685	✓	}	
	2.687	+0.005/-0.000	2.692	✓		
	2.793	+0.005/-0.000	2.798	✓		
	2.930	+0.005/-0.000	2.934	✓		
	3.067	+0.005/-0.000	3.070	✓		ML-05
	3.205	+0.005/-0.000	3.205	✓		
	3.358	+0.005/-0.000	3.362	✓		
	3.378	+0.005/-0.000	3.381	✓		
	3.500	+0.005/-0.000	3.504	✓		
	0.127.82	+/-0.020	127.836	✓	M-tape	ML-2

Measured by: <i>and</i>	Audited by: <i>SA</i>	Preliminary Approval:
Date: 11/01/19	Date: 11/1/25	Date:

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-209)	KJ/EC	
B	10.11.12	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
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Item	Qty	Part Number	Description
1	X	D412-664-249	CROSSTUBE ASSEMBLY (412 LOW AFT)
2	1	D6009-129	CROSSTUBE
3	2	D2856-600-1009	ABRASION STRIP
4	1	D2896-1	SUPPORT
5	2	D3189-1	CHAFING SHIELD
6	2	D3595-063-570	RUBBER CUSHION
7	2	D3660-1	CUFF
8	44	CR3212-4-07	RIVET (OR M7885/3-4-07)
9	4	MS21920-28	CLAMP
10	2	MS21920-30	CLAMP (OR MS21920-32)
11	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
12	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 127.826±0.020 (BEFORE BENDING/TRIMMING)
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D412-664-249" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 42.5 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2896-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE THE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- INSTALL D2856-600-1009 ABRASION STRIPS WITH A 0.13 REF GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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WORK ORDER

NO. 65271

C211/01/10

RELEASED
2009-10-28

B	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D412-664-249	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE (412 LOW AFT)	NTS
DATE	09.09.30	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

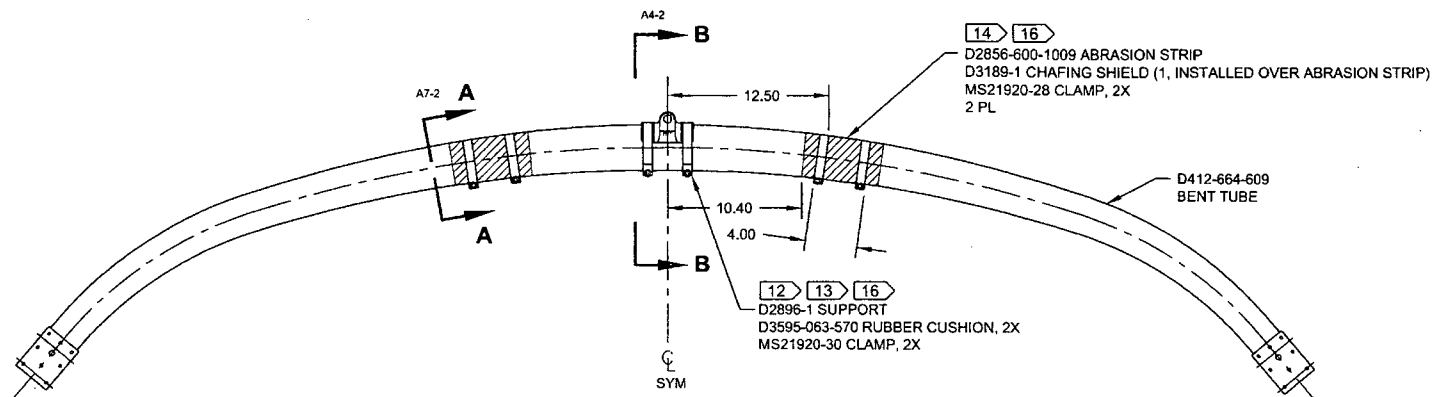
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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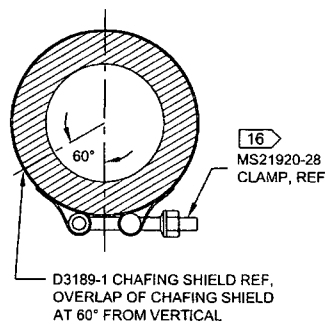
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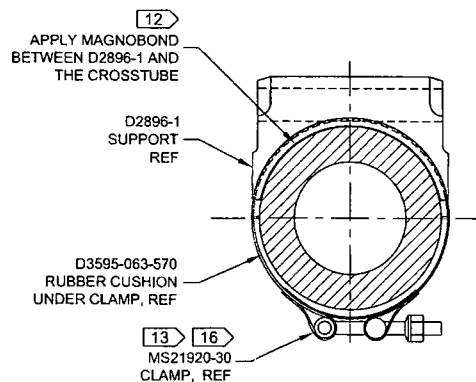
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D412-664-249
ASSEMBLY DETAIL



SECTION A-A D6-2
SCALE 4X



SECTION B-B D5-2
SCALE 4X

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2009-10-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D412-664-249	SHEET 2 OF 4
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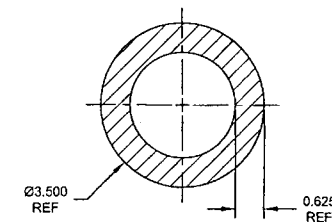
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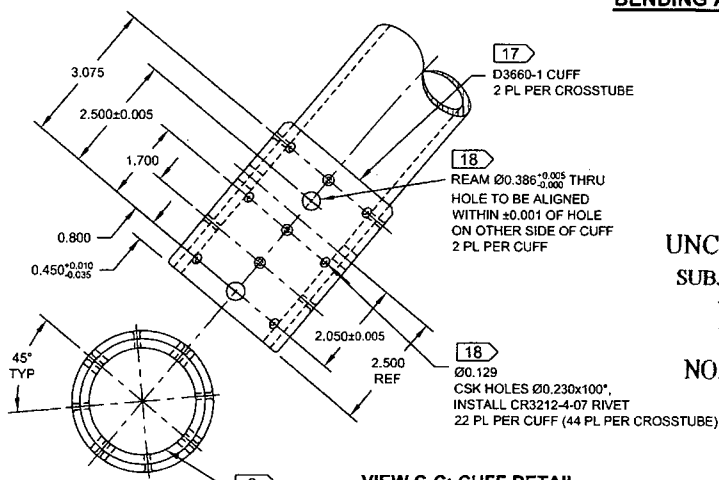
D412-664-609
BENDING AND DRILLING DETAIL

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SECTION D-D D4-3
SCALE 4X

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2009-10-29



VIEW C-C: CUFF DETAIL D8-3
SCALE 4X

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CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D412-664-249	SHEET 3 OF 4
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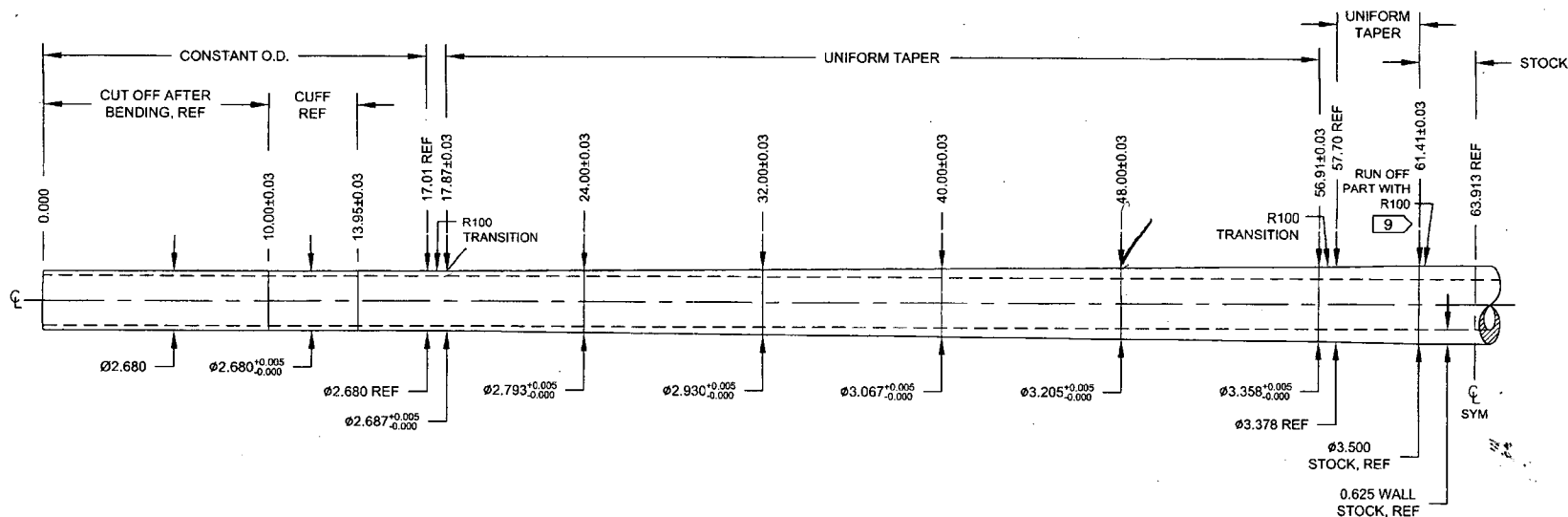
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TURNING DETAIL

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RELEASED
 2009-10-29
 JMD

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